

FIG. 1
PRIOR ART

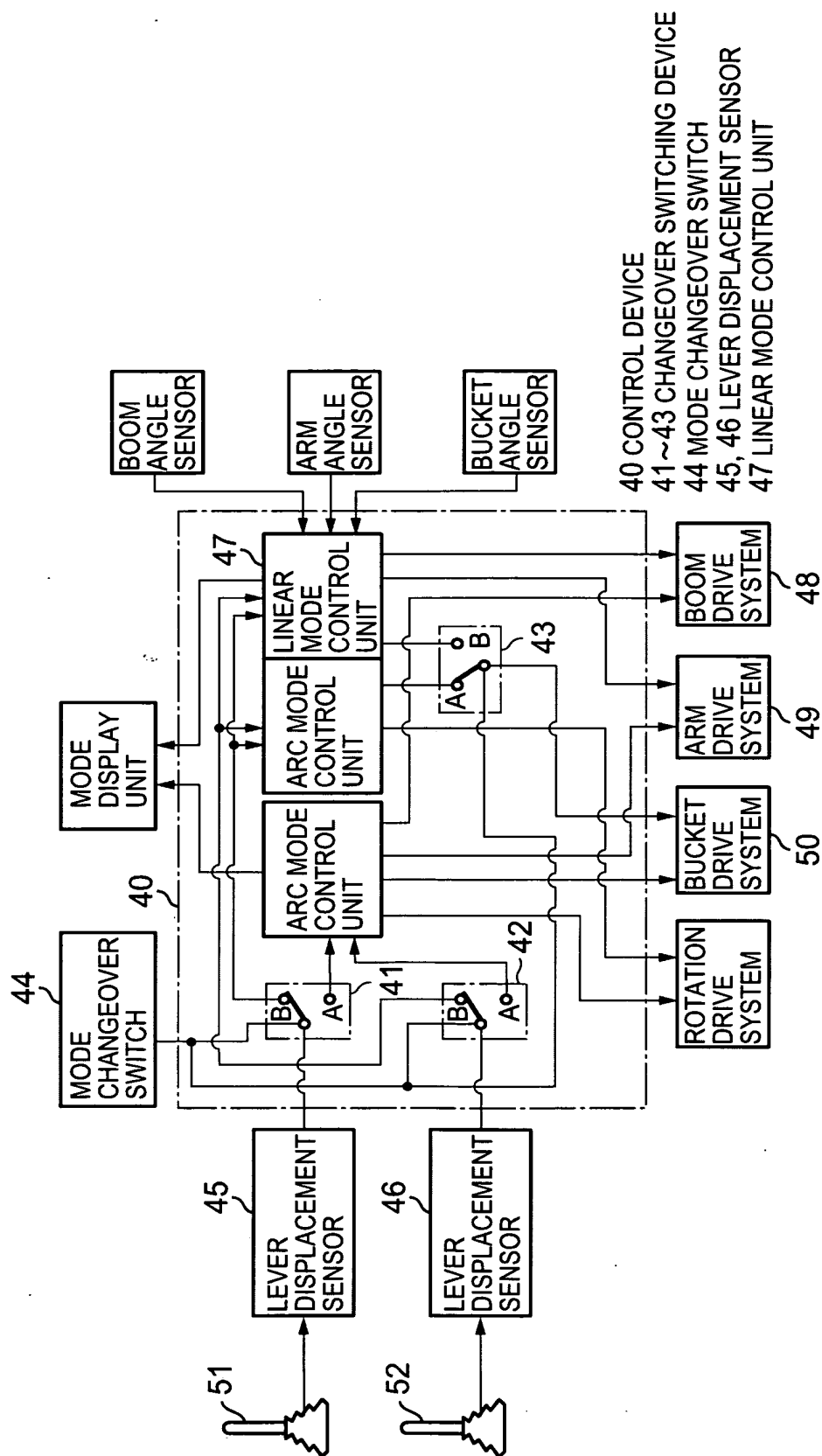
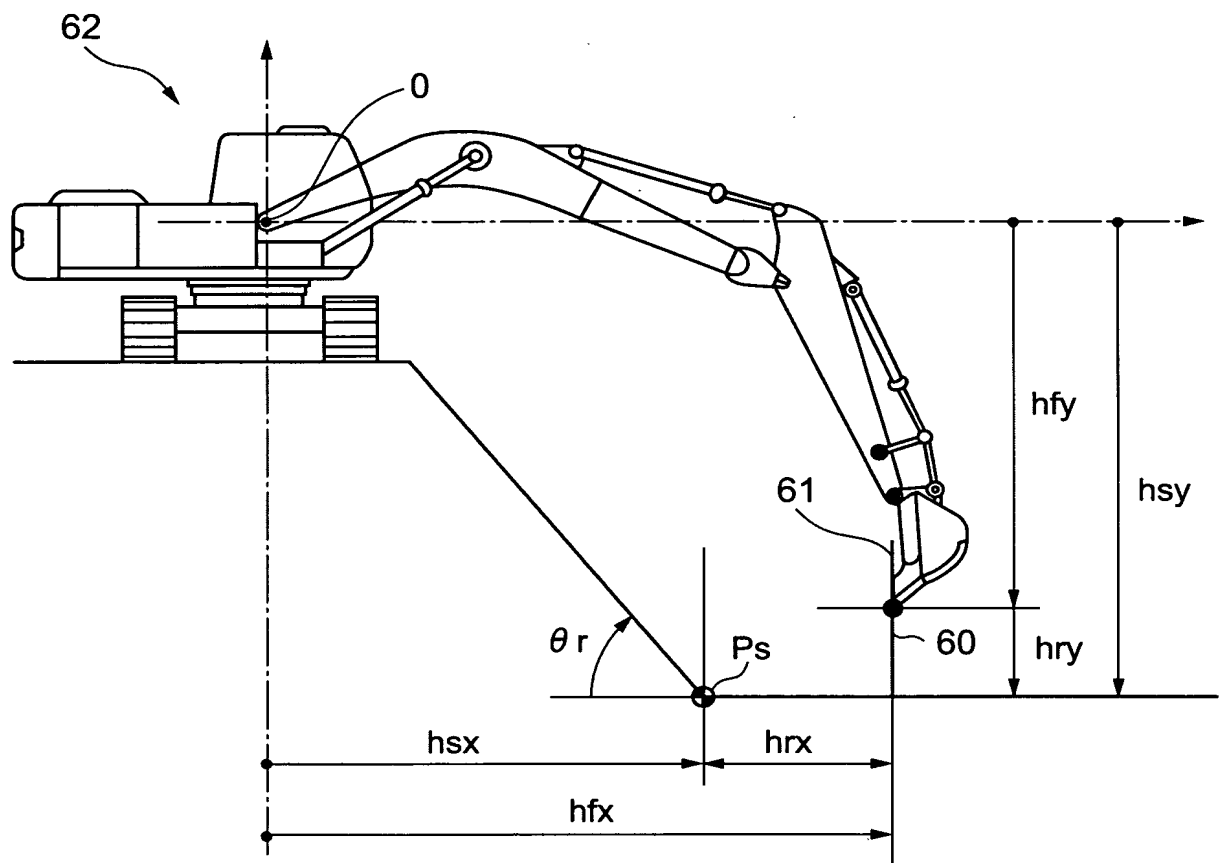


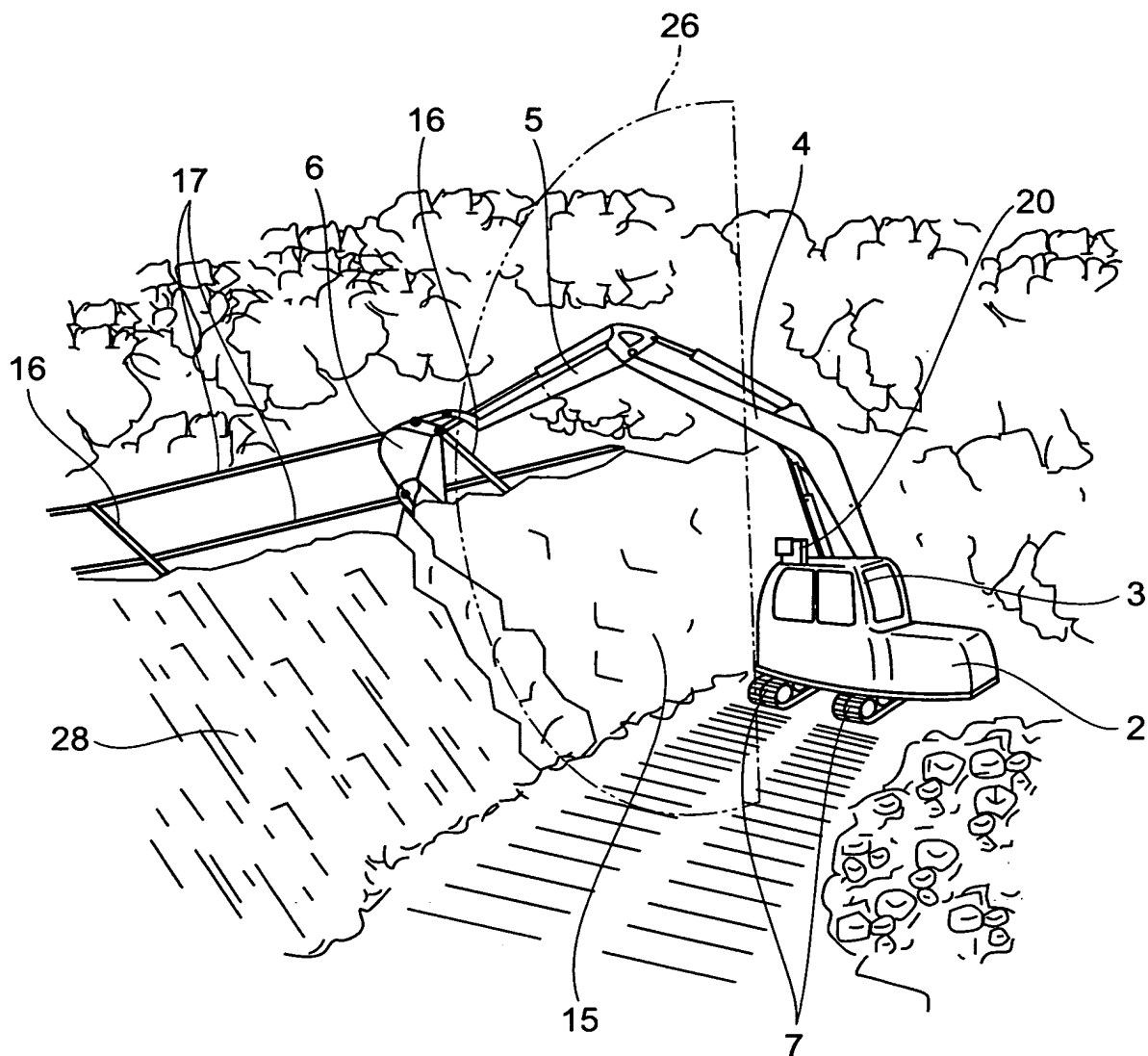
FIG. 2
PRIOR ART



60 EXTERNAL REFERENCE
61 FRONT REFERENCE
62 VEHICLE BODY

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FIG. 3



2 UPPER ROTATING BODY
3 OPERATOR'S CABIN
5 ARM
6 BUCKET
7 LOWER TRAVELING BODY

15 CONSTRUCTION SURFACE
16 STAKE
17 CORD
20 DISTANCE MEASUREMENT DEVICE
26 SCANNING REGION

FIG. 4

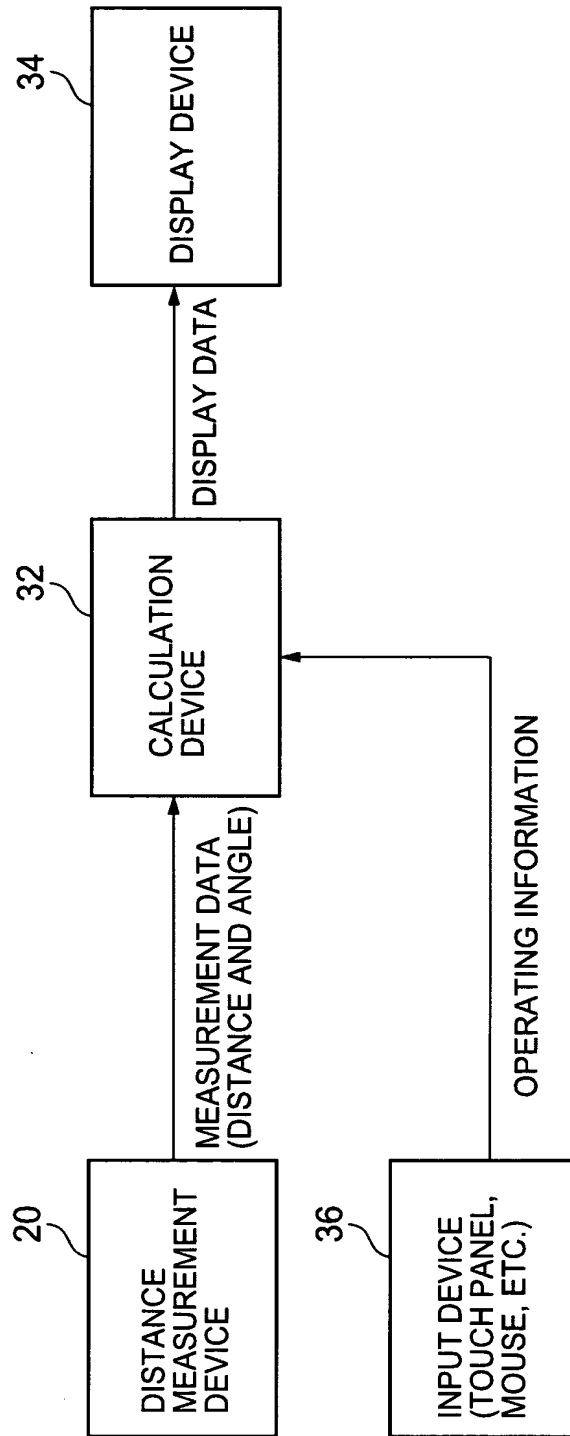
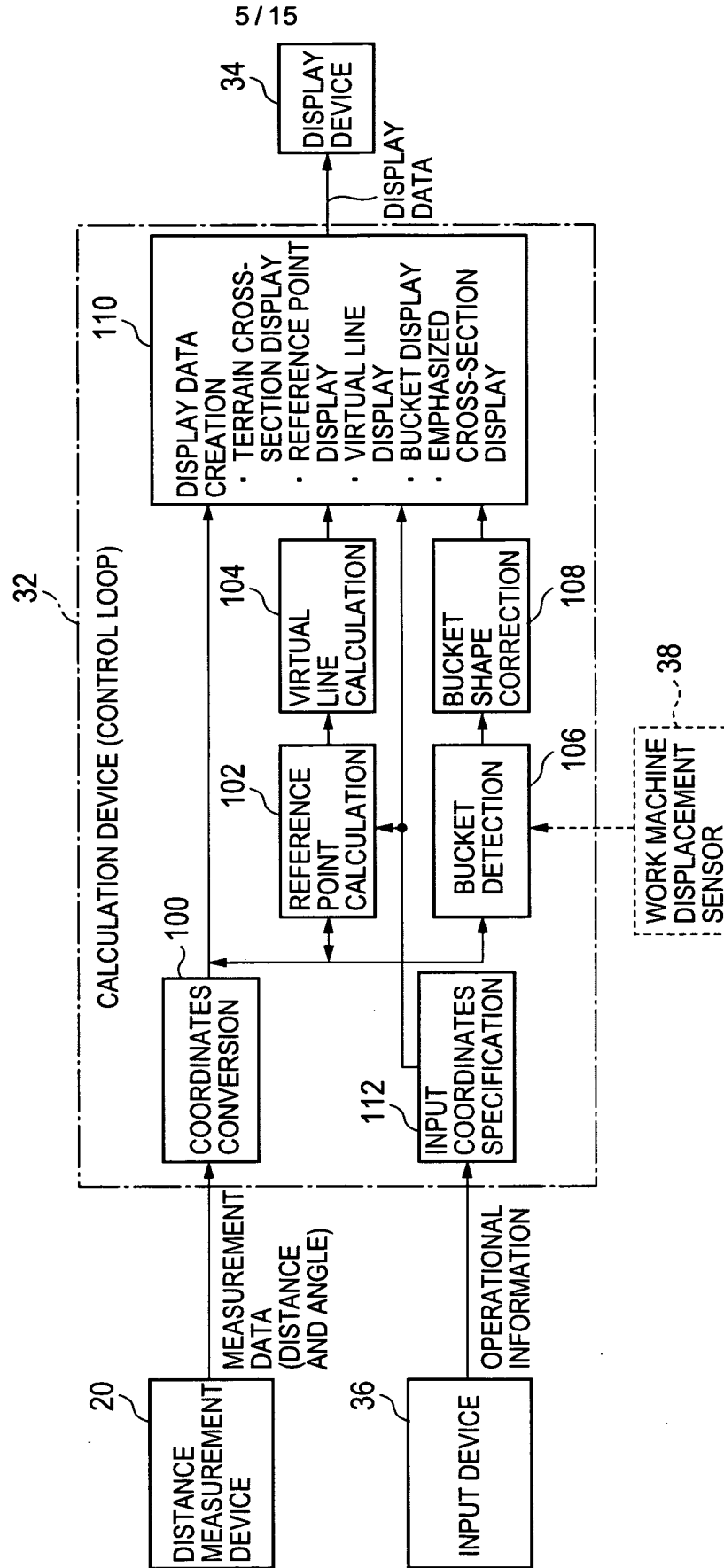
30 CONSTRUCTION TARGET INDICATOR DEVICE

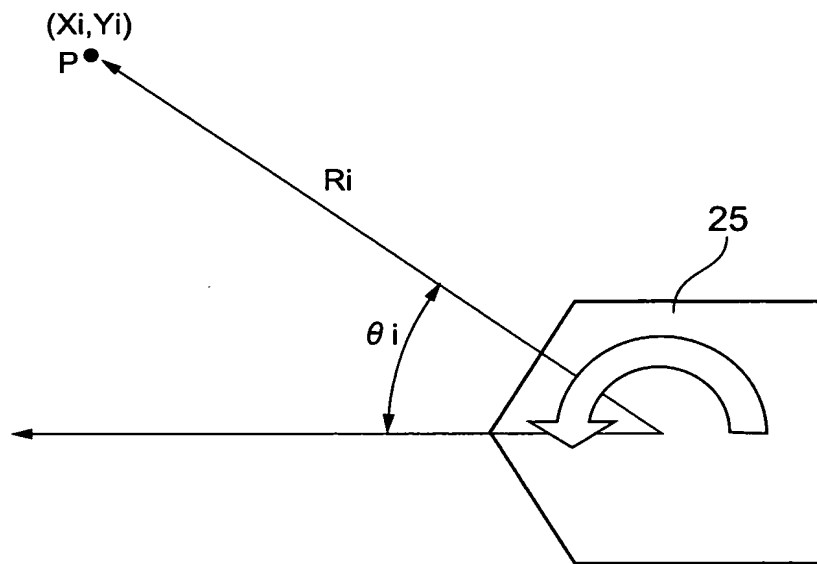
FIG. 5

30 CONSTRUCTION TARGET INDICATOR DEVICE



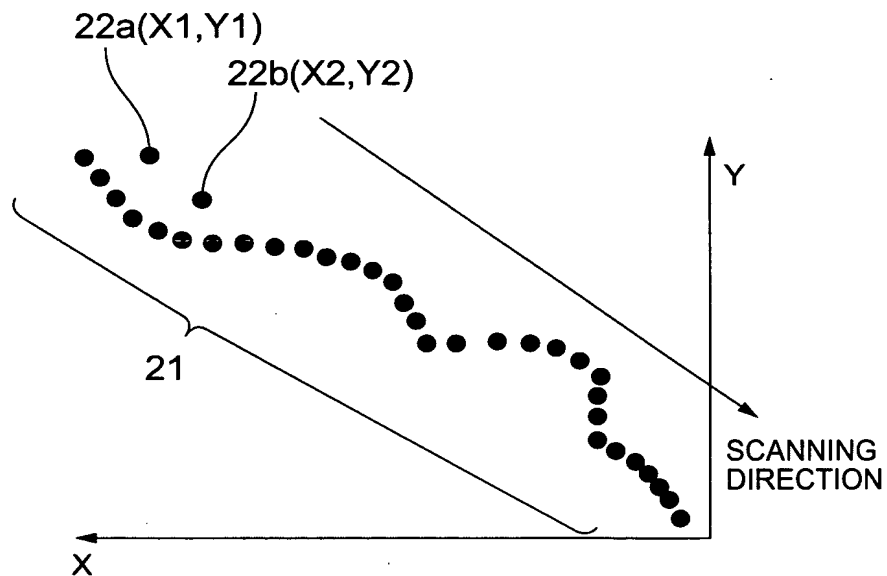
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FIG. 6



25 LASER DISTANCE MEASUREMENT DEVICE

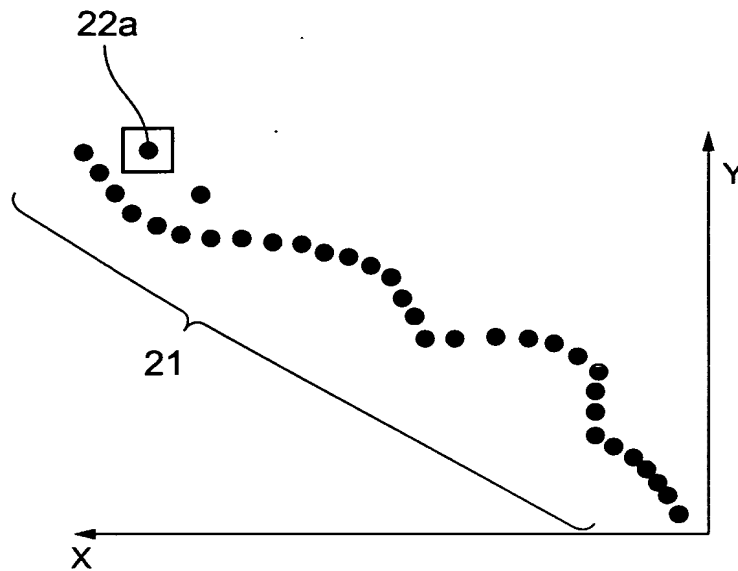
FIG. 7



21 POSITION DATA OF CROSS-SECTION OF TERRAIN
22a, 22b REFERENCE MARKER (CORD)

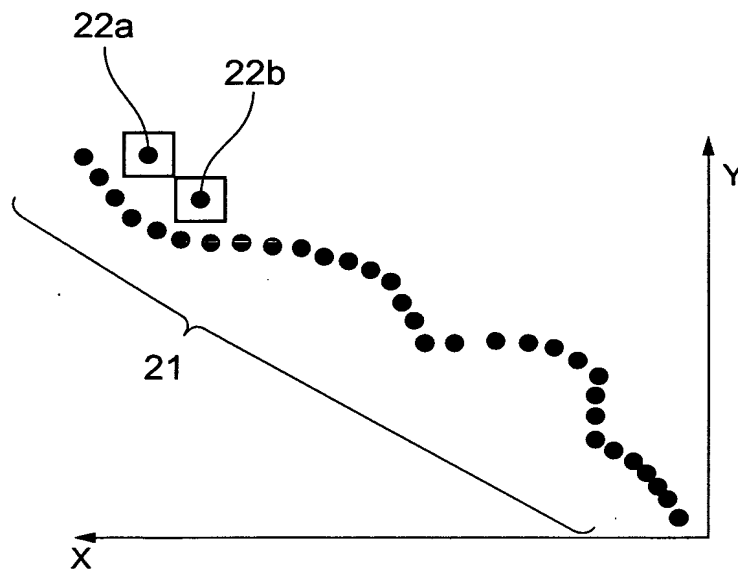
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FIG. 8



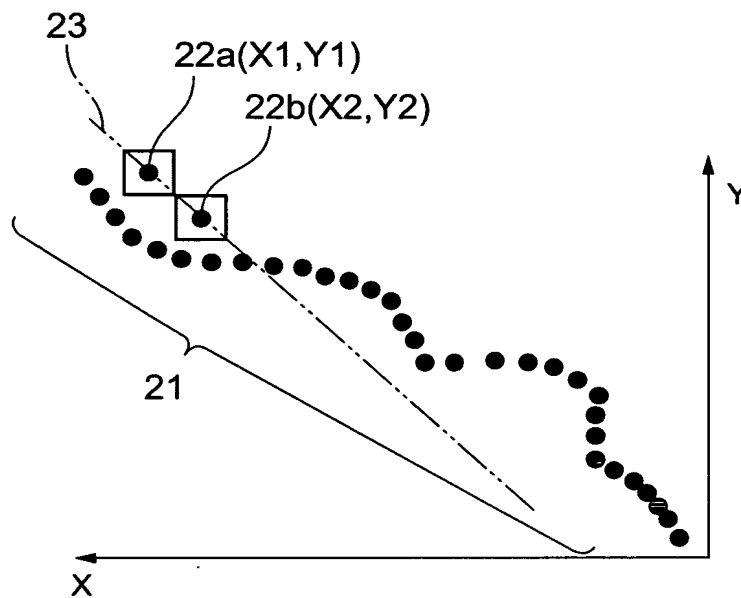
21 POSITION DATA OF CROSS-SECTION OF TERRAIN
22a REFERENCE POINT

FIG. 9



21 POSITION DATA OF CROSS-SECTION OF TERRAIN
22a, 22b REFERENCE POINT

FIG. 10



21 POSITION DATA OF CROSS-SECTION OF TERRAIN
22a, 22b REFERENCE POINT
23 VIRTUAL LINE

FIG. 11

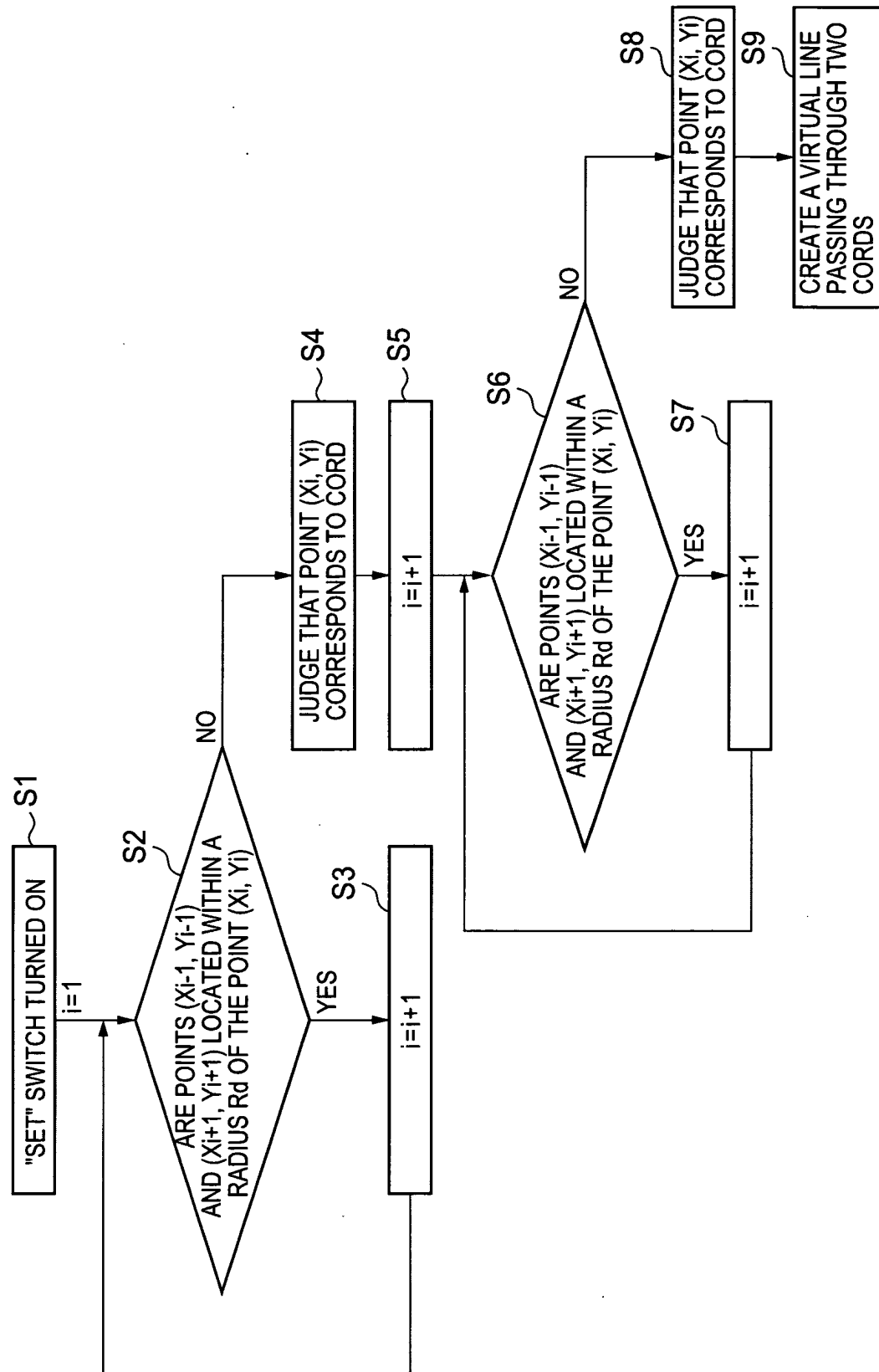
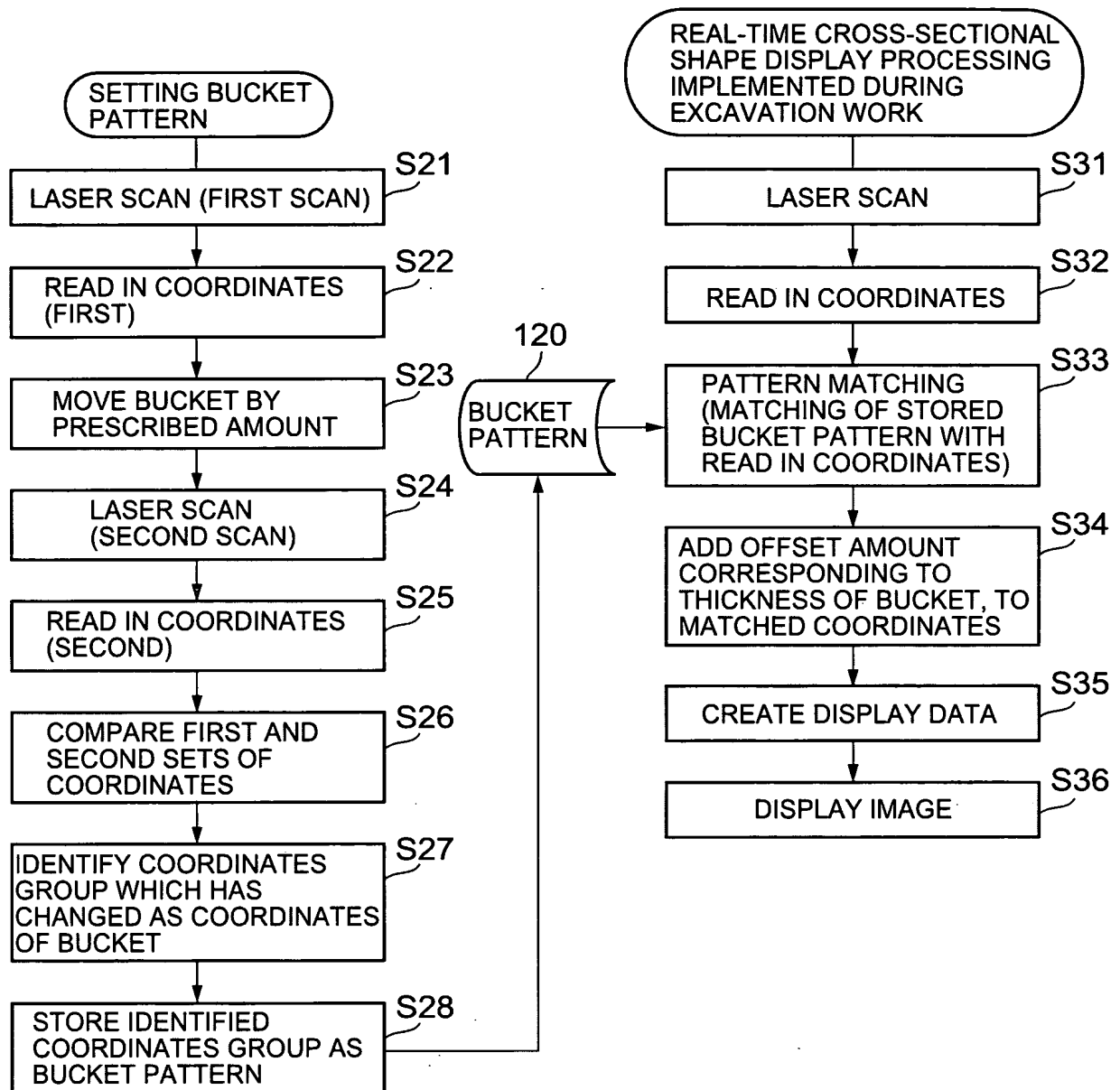


FIG. 12



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FIG. 13

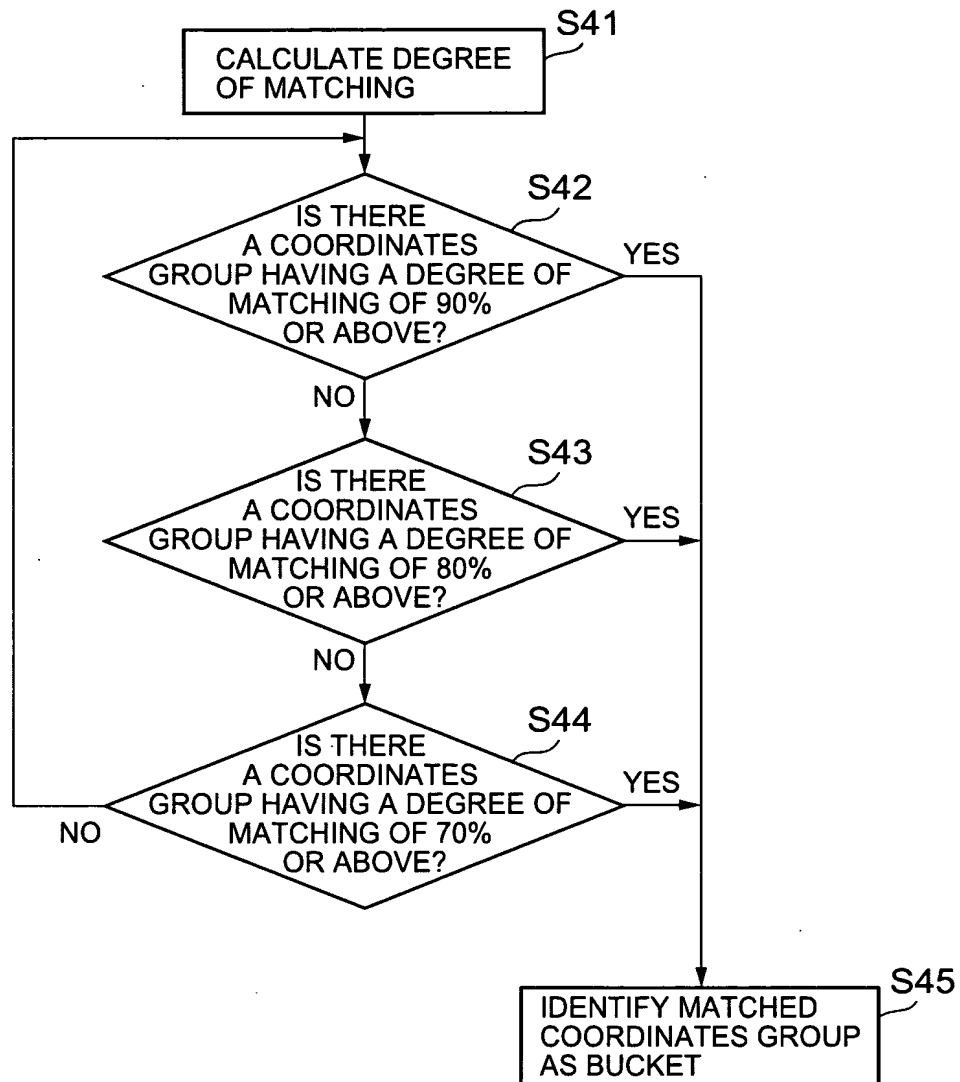
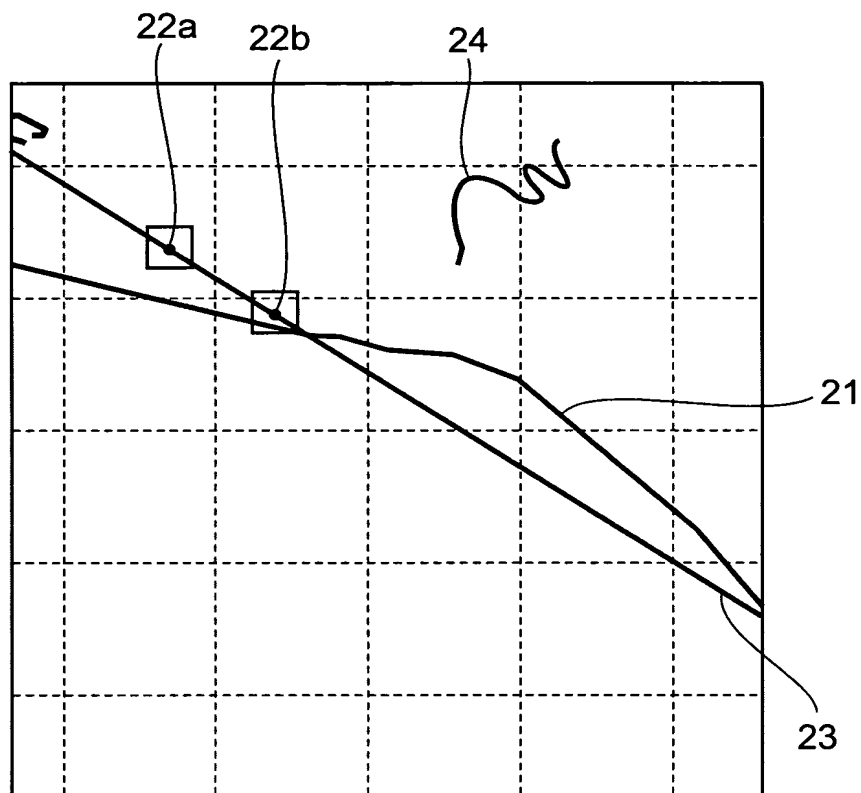
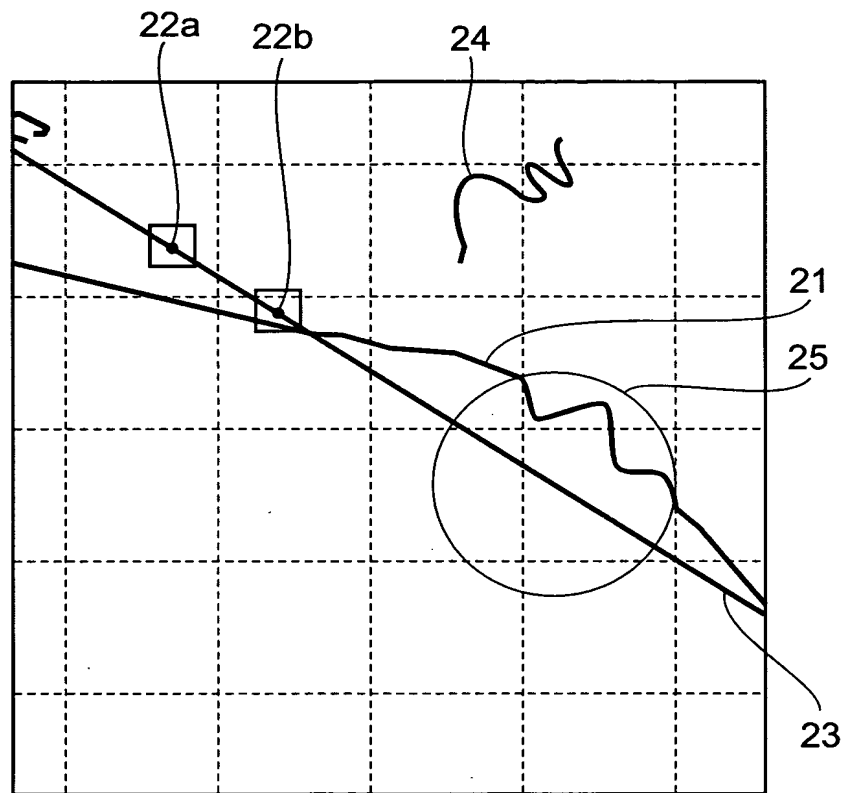


FIG. 14



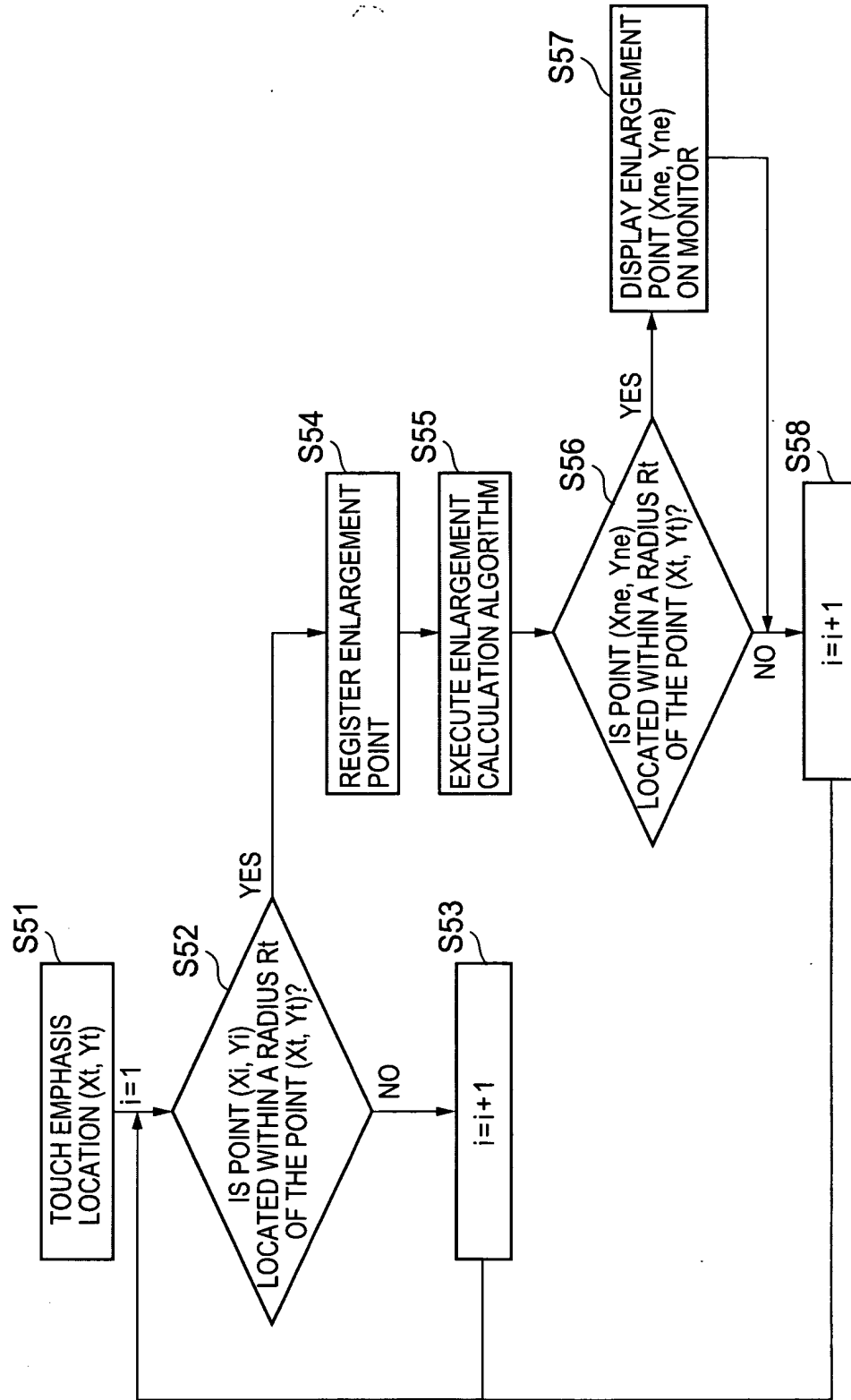
21 POSITIONAL DATA OF CROSS-SECTION OF TERRAIN
22a, 22b REFERENCE POINT
23 VIRTUAL LINE
24 POSITIONAL DATA OF CROSS-SECTION OF BUCKET

FIG. 15



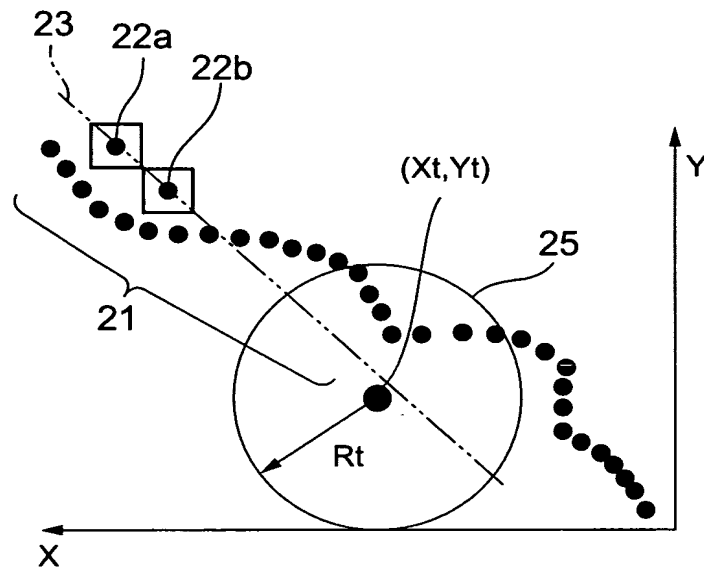
21 POSITIONAL DATA OF CROSS-SECTION OF TERRAIN
 22a, 22b REFERENCE POINT
 23 VIRTUAL LINE
 24 POSITIONAL DATA OF CROSS-SECTION OF BUCKET
 25 ENLARGED DISPLAY REGION

FIG. 16



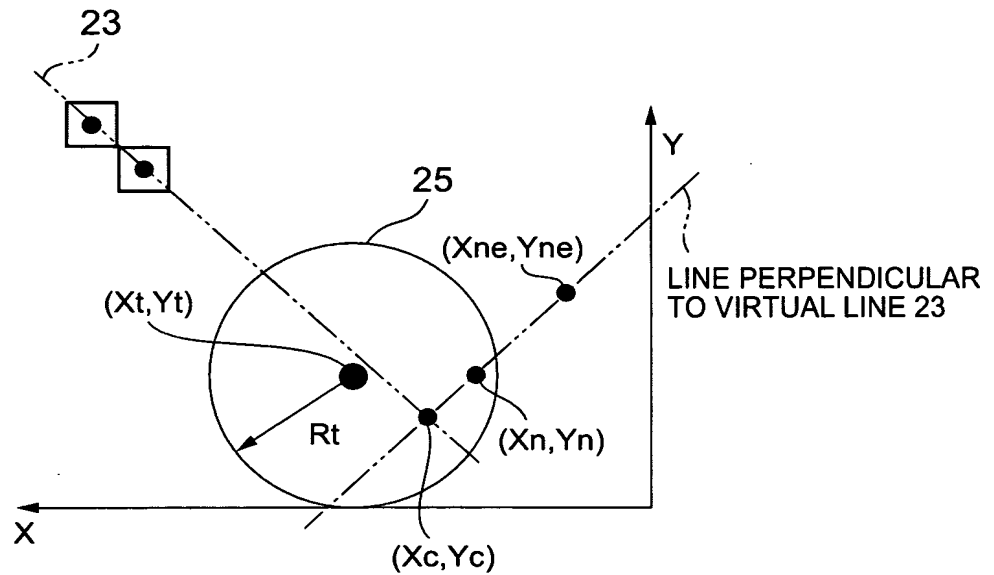
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FIG. 17



21 POSITIONAL DATA OF CROSS-SECTION OF TERRAIN
 22a, 22b REFERENCE POINT
 23 VIRTUAL LINE

FIG. 18



23 VIRTUAL LINE